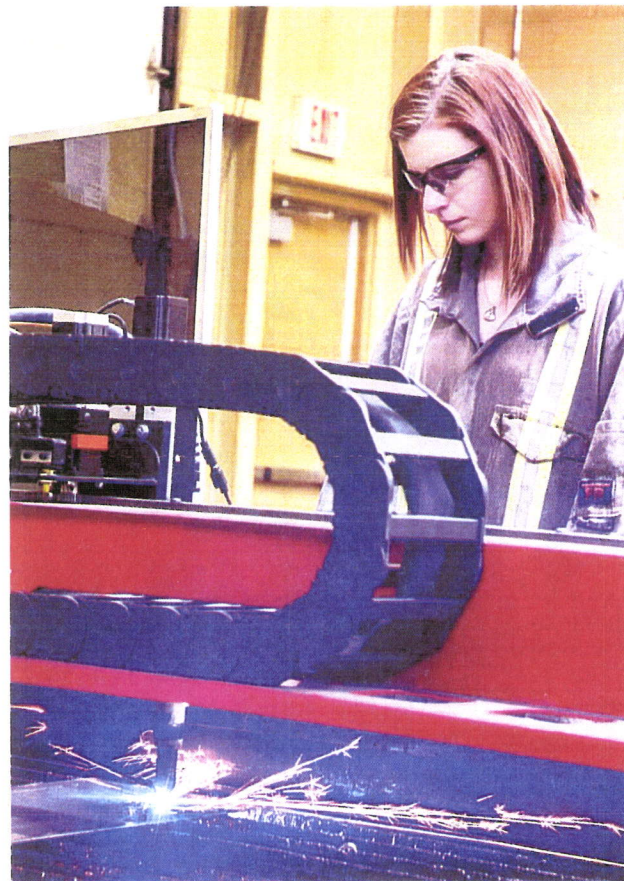
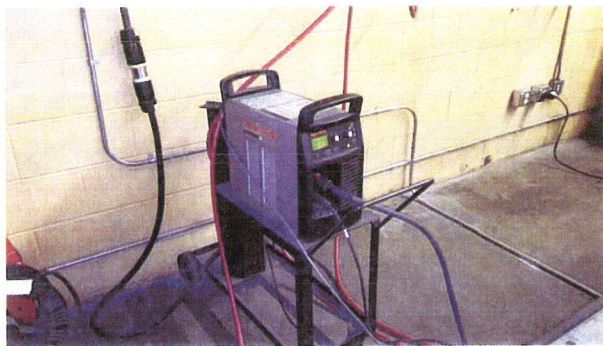


# CTE Funding

## Billings Career Center

### Metals

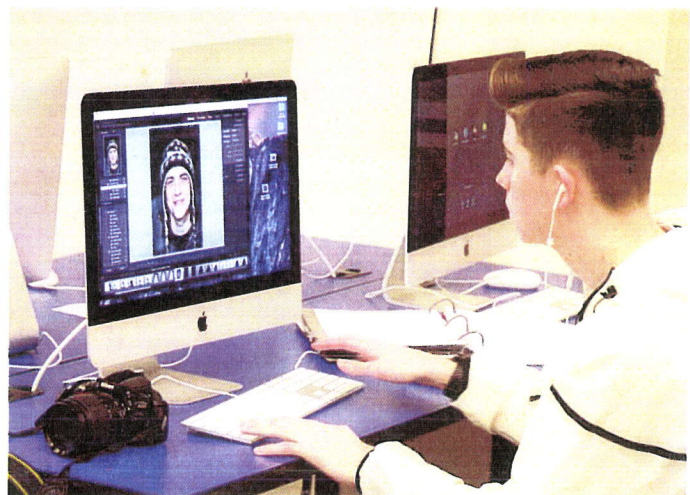
The additional CTE funding has made our program sustainable. Years ago we had a large amount of metal donated to the program for welding practice. We have now used most of this metal. This funding has allowed us to continue to operate through purchases of steel and other necessary consumables. Additionally, we purchased needed safety equipment such as welding helmets and jackets. We were also able to purchase an upgrade to our plasma cutter.





## Graphics and Photography

We are using state-of-the-art design software. We can now count on updating this software yearly thanks to our new CTE funding. Additionally we are looking forward to purchasing monitors which allow the students to work directly on them, which will minimize the disconnect between eyes and hand caused by using a mouse.





## **Interiors**

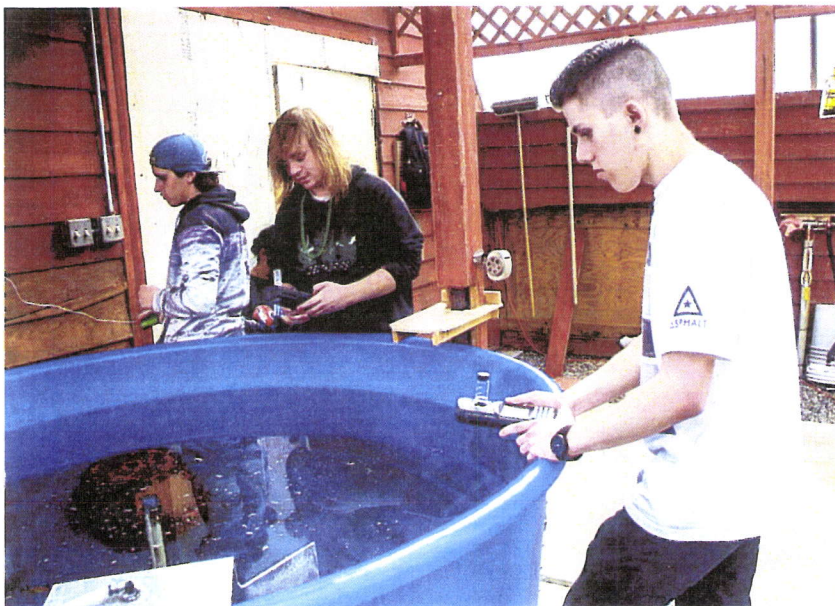
I am excited to be able to use \$1,400.00 to charter a bus to Bozeman to visit Gallatin College. We will be taking counselors, parents, and high school students who have successfully enrolled in dual credit with Gallatin College. We have for many years tried to form a connection with an Interior Design program in the state. We now have a great connection with Gallatin College in Interior Design. We have 10 students enrolled this year and I am so excited to see them get ready to make a smooth transition between high school and post secondary education.

## **Environmental Studies**

The additional CTE funding has been used to purchase technology applications in my program such as Thinglink and Snagit. These have been great programs to enhance my teaching and for my students to use in presenting their knowledge to the class.

## **Urban Agriculture:**

The additional CTE funding will be used to remodel one of our greenhouses to create an aquaponics greenhouse in order to expand our curriculum. We will also use the funding to help with the purchase of materials needed for the plant beds, fish tanks and water system.







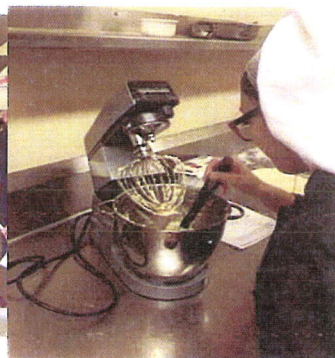
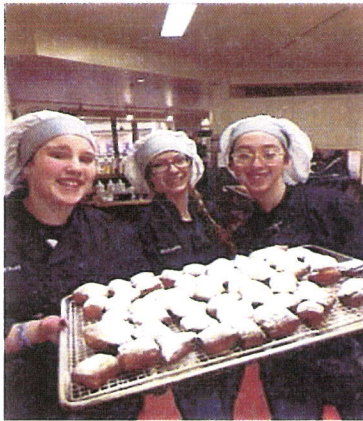


## Café Protégé

The increased funding for CTE paid dividends to our Culinary Arts program from day one of the school year. To begin with, we were able to subscribe to SP2 Safety Training to provide industry standard safety training to each student before the start of culinary labs.

Next we were provided greater access to ingredients and tools. Teaching consistent quality food production requires repetition along with a constant flow of fresh products. The variety of products also expands the curriculum. Increased funding makes that possible.

Not only are the students gaining skills and techniques needed for gainful employment; they are acquiring skills that improve the quality of their daily food choices. Being trained to cook allows one to lower dependency on high priced poor quality prepared foods that may not supply balanced nutrition.



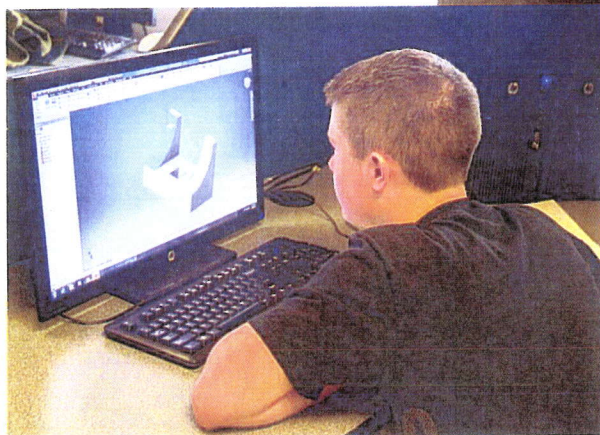
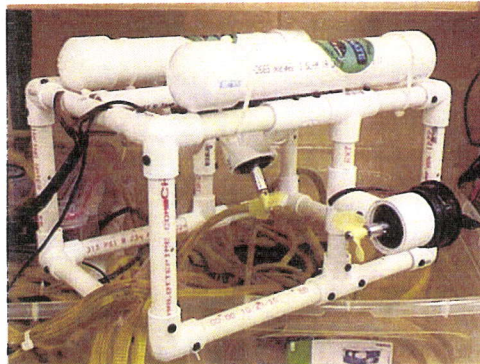


## Engineering

The engineering program at the Career Center has expanded its curriculum with the addition of a Capstone class that offers students the opportunity to explore advanced projects. These include VEX Robotics which utilizes a problem-solving design with electromechanical devices, Remote Operated Vehicles (ROVs) which take robotics into a underwater environment, and aquaponics which addresses sustainable food production solutions. Lastly, students are working to provide 3D-printed prosthetics for children missing hands through [e-nable.com](http://e-nable.com).

Locally the program is working with SD#2 elementary school in assisting teachers to implement PLTW robotics and aerospace curricular activities into their classrooms. High school engineering students have visited two schools in grades 3 and 5 with plans to visit more.

Engineering students will also be visiting Mark Rite Lines which is one of the country's largest manufacturing facilities for line-striping trucks. Students will tour and visit with engineers, designers, and fabricators that involve mechanical, electrical, chemical, industrial, and computer engineering processes.





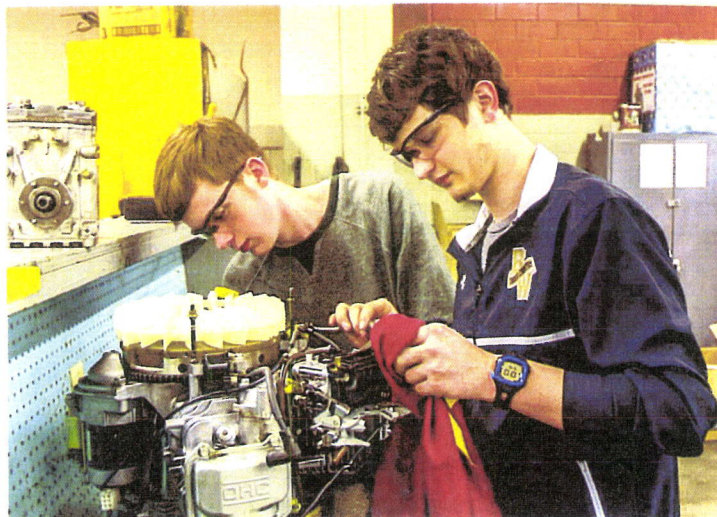
## Automotive

The Career Center Automotive program has and will benefit from increased CTE funding. The automotive field is constantly evolving technologically. The era of being able to perform most repairs on a vehicle at home with a set of basic hand tools is, if not quickly disappearing, already past. Today's vehicles depend on advanced electronic systems. Computers monitor, control, and store information about every system involved in a vehicle's operation. Because of this, advanced and expensive diagnosis and repair tools are needed to accurately repair vehicles. Our students are potentially going to pursue this field as a career and need exposure and training for modern diagnostic and repair equipment so they are capable of being successful in their pursuit of employment. The Career Center's automotive program's ability to purchase equipment and train the instructors on new, required industry equipment will ensure that our students are given a chance to use the same equipment they will encounter on the job.

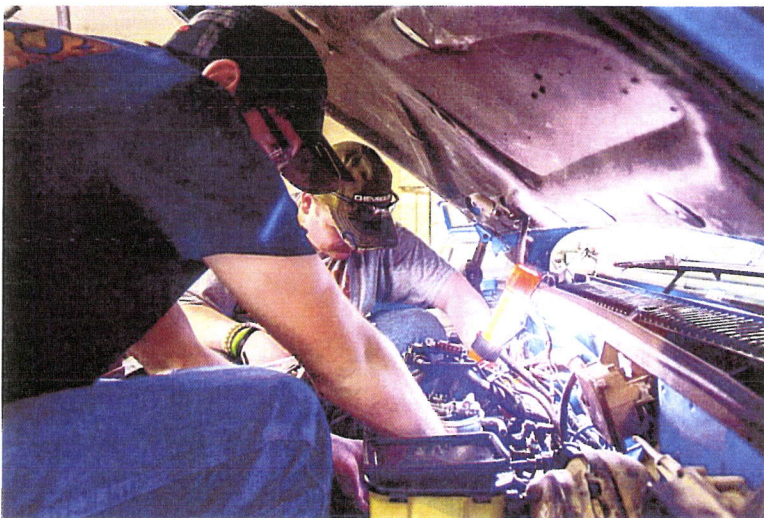
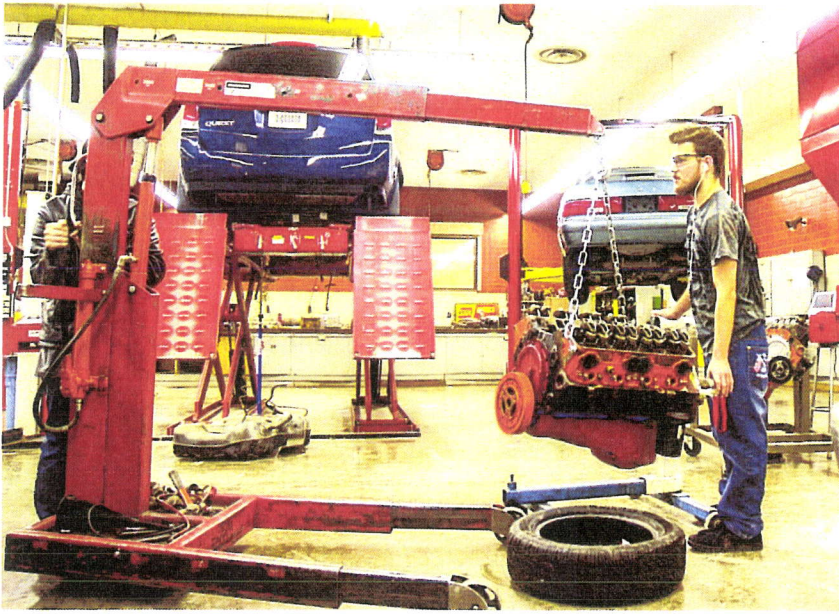
Diagnosis requires the ability to use a mix of both mechanical and computer related tools and solutions. Because of this, electronic tools, such as diagnostic computer scanners, are necessary for teaching students how to recognize electrical or computer related problems. Newer vehicles also need modern repair tools. For example, modern steering and suspension systems require a computerized alignment rack so alignment angles on both the front and rear of the vehicle are correct. Without the tools purchased with CTE monies, diagnosis and repair of vehicles would be limited to discussing theory without the ability to put their knowledge into practice.

Information about newer vehicles is constantly being updated. Few modern cars and trucks are able to use service literature that covers several model years, as was common in the past. The funds provided for CTE programs gives the Automotive program the ability to subscribe to industry related electronic service information sites, such as ALLDATA, to teach repair and diagnostic procedures on current automotive technology. It also gives the program the ability to access information on older vehicles without the need for a large and expensive library of service manuals.

CTE funding allows the Career Center Automotive program to remain current and relative in an increasingly specialized and complicated career field. The increase in funding helps the Automotive program remain a valuable resource for a career field that is in demand and in need of extensively trained technicians.



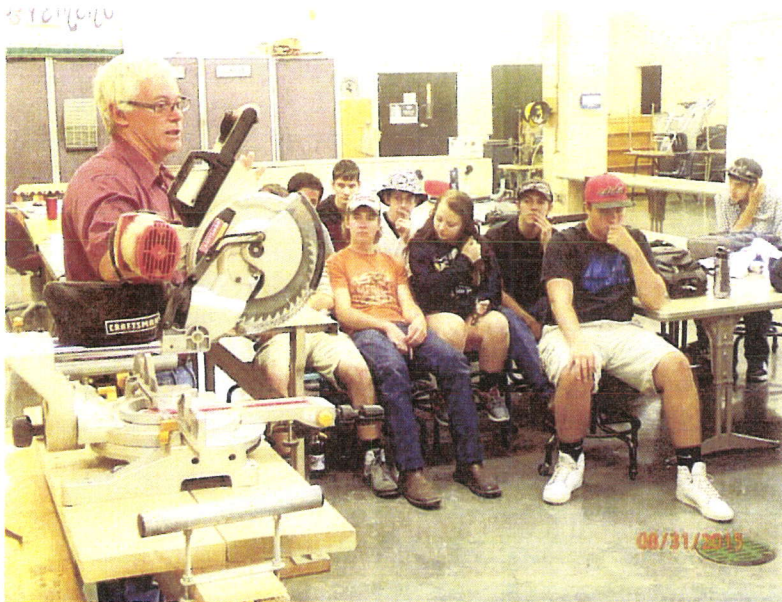






## Construction Programs

With the additional CTE funding provided to our department this year, in addition to consumable supplies, we were able to purchase much needed tools, such as roofing nailers, battery packs, battery charging stations, a table saw, a bandsaw tire kit, and a flood light. We were also able to purchase additional materials to build sheds. We were also able to provide students with industry standard safety training utilizing the SP2 Safety Software.





## Principals of Biomedical Sciences (PBS) and Human Body Systems (HBS)

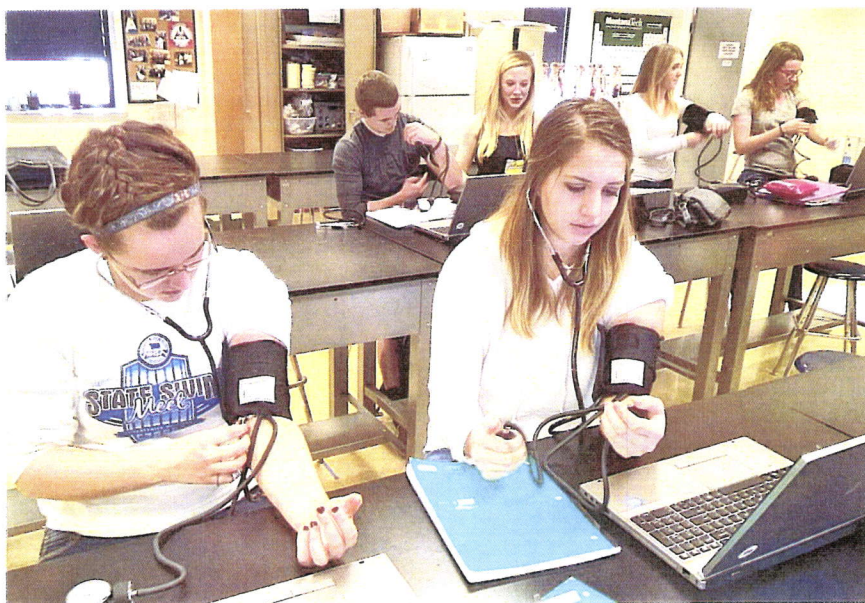
We have been able to start an STEM outreach program with our elementary schools. We will be using some of the CTE funding to take our PBS students to an elementary school in about a month. Our PBS students will teach the elementary school students about the human body using our 3-D manikins. This will allow community outreach to promote our program of study, excite younger students of what they have available in their educational future, and our students the opportunity to give back to our community.

Additionally we have used the CTE funding to buy consumables. The additional state funding will allow students in "Human Body Systems" class to dissect their own specimens rather than being required to share.

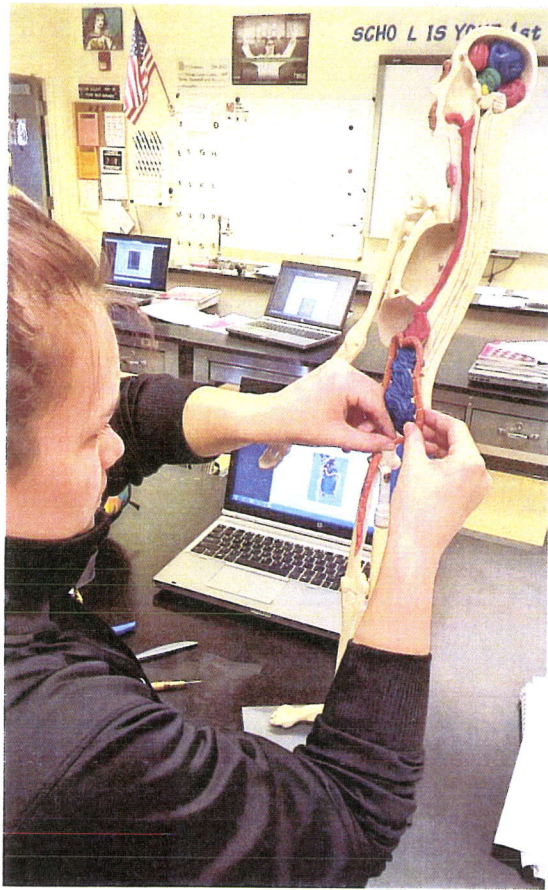
The funding has also allowed us to purchase more consumable supplies for labs, such as pipet tips, autoclave bags/tape, pre-made agar, thus allowing students to work in smaller groups and as a result, a better opportunity to learn.

We intend to order more 3-D models so students can learn from these, rather than just seeing illustrations on the internet of various parts of the human body. This allows students the opportunity to see organs and structures in their proper, realistic placement in the human body and to scale.

We also intend to use the additional state funding to do a three week lesson of a cat dissection, should we finish our required curricula with time remaining this year. If our schedule doesn't allow this year, we hope to be able to modify our curricula to allow for this next year. This opportunity is seldom done at the high school level, and is typically done at the college level at schools that do not have the ability to dissect/observe cadavers.













## Medical Careers

Having access to the state CTE funds has allowed me to provide more lab experience and hands-on learning with my students:

I purchased materials to do the small scale anatomy and clay program with my students. Many of them comment on how much they liked that and how it helped them learn and assimilate the curriculum more quickly.

I also purchased consumable supplies such as athletic tape and pre-wrap to incorporate more skills acquisition on medical professions. As a biomed department we also bought infant and adult CRR manikins and first aid supplies and hope in the future to be able to certify our students in CPR and first aid in house. This equipment will also help serve our students in our CTSOs like HOSA.

Some of the money is also being used to improve and impact the reach of our HOSA organization. This year we have 23 active members with 18 members going on to compete at the State Leadership Conference in Missoula next March. The chapter is active in volunteering in the community, teaching younger students about health, career exploration, and skills acquisition.



Picture of the anatomy with clay



Picture of a HOSA student learning technical medical skills

## Skyview Technology education use of State Money

Thank you for the continued support of Vocational education at Skyview and in the district as a whole. I am including a couple examples of how the increased money by the legislature has enhanced my ability as a teacher to impact students at Skyview.



4 examples below:

CNC -(computer controlled machines) cutting F1 and Co2 cars

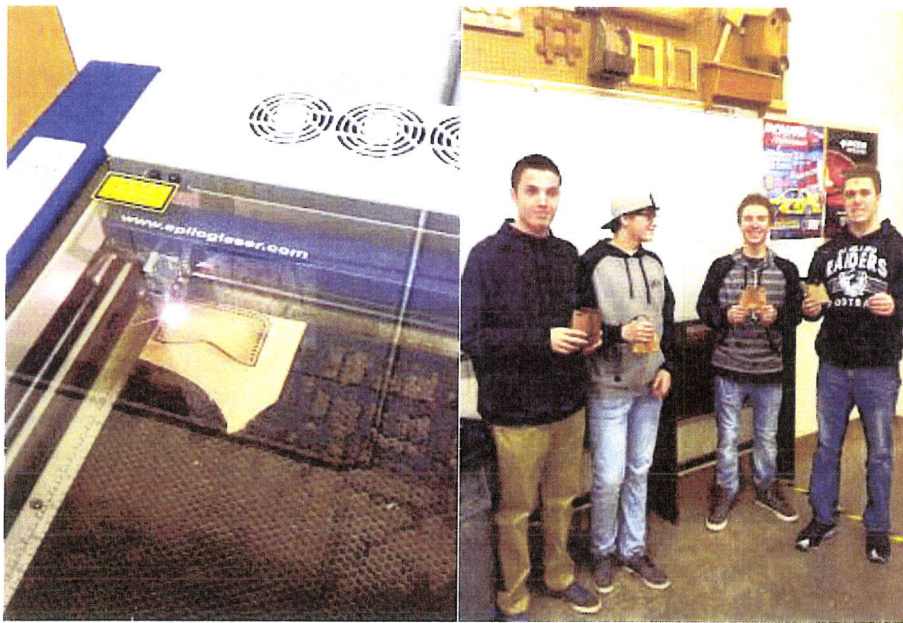
Laser working of leather

Animation program

Indian ed for all - Drum making

Old school leather working with a laser twist.

We were able to purchase a laser engraver with Perkins money, but in combination with state funding I was able to purchase materials to reintroduce leather working. This is more about pattern making and generating the interest in vocational areas. It incorporates computer and drawing skill, math and measurement, and thinking through a process to accomplish a finished product. Patterns are cut with the laser and then images or text are engraved with 21st century skills.

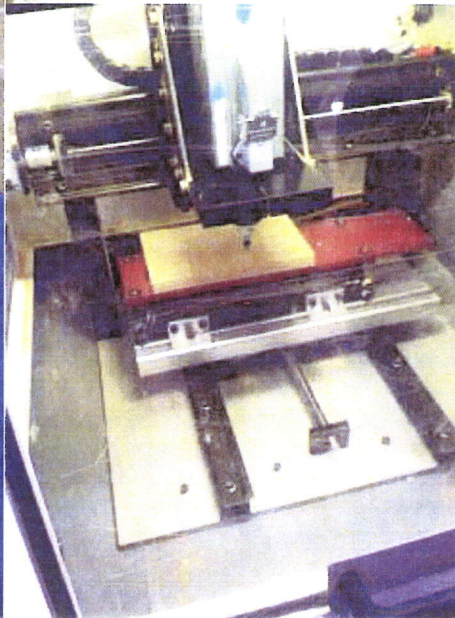
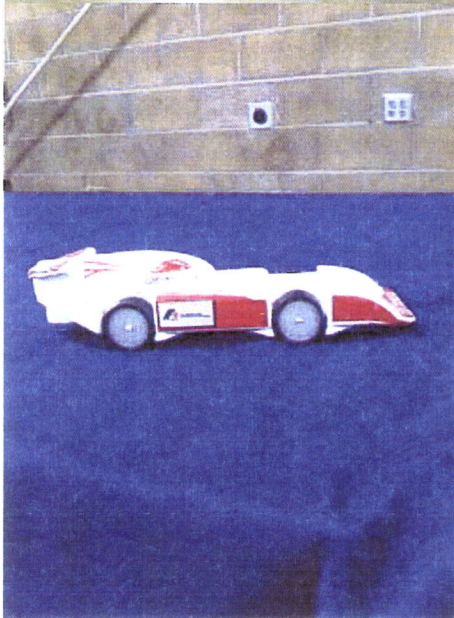


F1car /Co2 dragster design and CNC manufacturing.

Last year through the House Bill 86 the Technology education association (TSA) increased its funding to enhance the club and activities that drive the curricular area. I was able to put on a workshop with an instructor from the UK (United Kingdom) for individual schools who do not have the CNC equipment to manufacture the cars. With increased funding to the program at Skyview I will be able to include a similar activity here but on a smaller scale.

<http://www.f1inschools.com/>

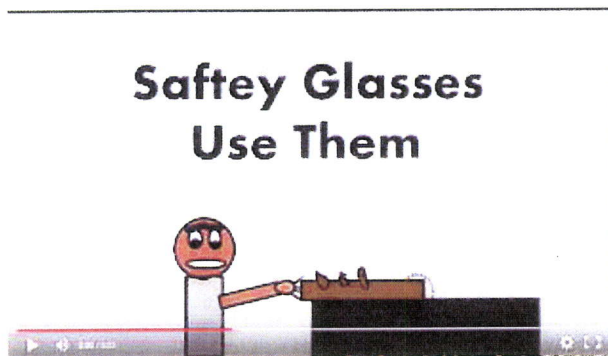
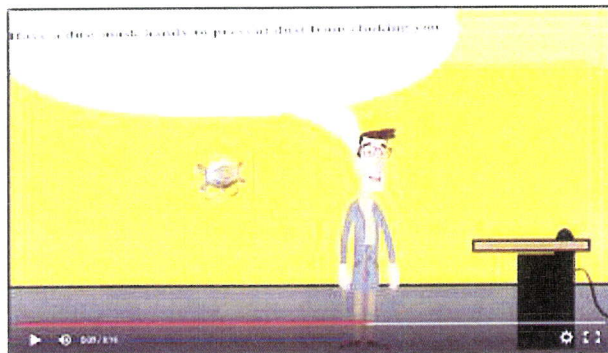
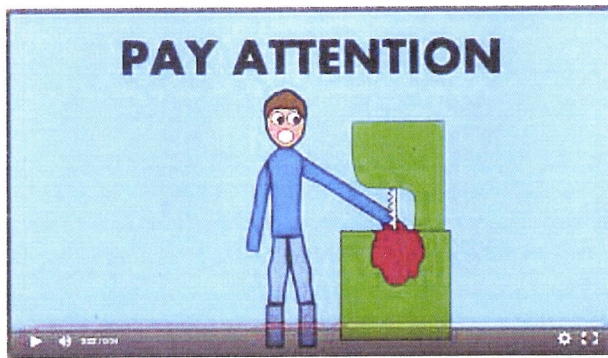




#### Animation program:

With the state increase I purchased a small but powerful animation program for students to use. This ties to the more in depth classes at the Career center. As part of the tech program the students made short safety videos about the shop. Below are some screenshots of the student videos.





## Drum making

Lastly I am working to try and connect a cultural/technology and vocational skills activity through Drum making with the Native American club at Skyview. This has been a slow process and one that I borrowed from the school in Harlem, MT. This activity has not occurred yet and may be something to do next fall, but essentially is a connection between the making of an octagon frame (math), using machines and equipment (vocational/shop), Stretching and working with leather (trade math/skill) and finally the cultural significance of the drum. I did not want to do something contrived and try to "force" the idea with a white shop teacher telling a native kid about his/her culture. Jennifer Smith is aware of the project idea and we are slowly making this happen. I hope that it will connect the shop with other areas of the school and provide a glimpse into the "T" part of STEM. Tech Ed has the potential to cross the curriculum and cultural line that vocational education has traditionally not dared to enter.

Thanks you again for your support!



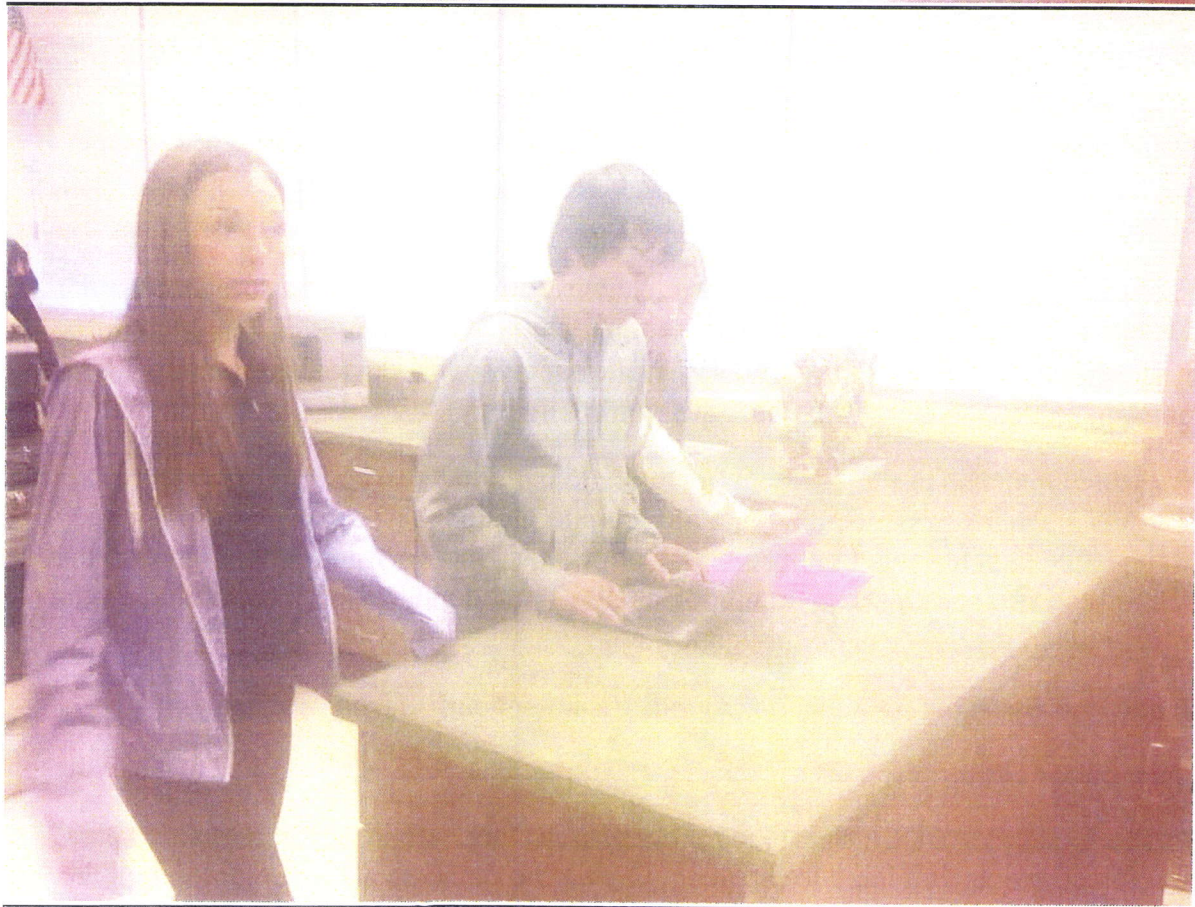
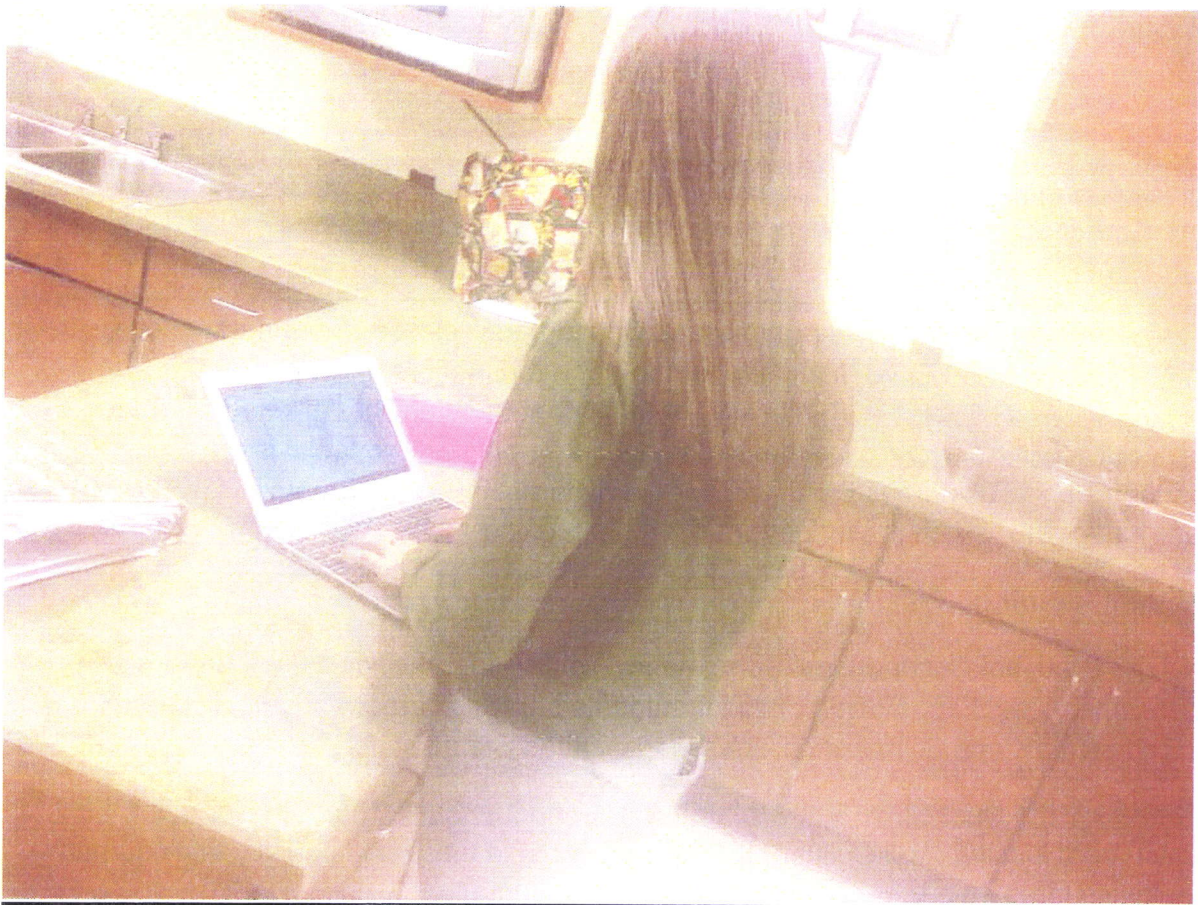
## West High School FCS

West High FCS department has appreciated our increased funding so much! We have used a portion of it to buy a set of Chromebooks and carts. We use these computers almost daily. Some of the projects our students are using these excellent learning tools for are: research on careers and colleges, finding components of home design projects, doing power points on cities and countries around the world, creating personal websites, completing and turning in their projects electronically, nutrition research projects, searching out recipes and patterns for sewing, community design projects and budgeting. They have also been working on technical writing skills in reformatting recipes. These are only a few of our abilities now that we have easy access!

Sheila Gay and I are also going to be able to update our skills and attend professional training this summer. I will be going to the National Family and Consumer Science conference in Bellevue, WA in June. It features many national speakers, some of whom are implementing dual credits with community colleges and universities. Sheila will be attending a Pro Start Conference that enhances culinary skills. This conference will be held in Sacramento, CA. This update will prepare students for culinary careers and possible competitions.









## Skyview Family and Consumer Sciences

### Montana State Vocational Funds for 2015-2016

Cindy Bergum  
Shaye Skovgaard  
Katie Gorder

This is just a partial list for our Family and Consumer Sciences Department needs, wants and desires. We've tried very hard to put a thoughtful list equipment and extended educational opportunities for both students and teacher alike. It is hard to think outside the constrictions that we have had for budget. We feel it is our responsibility to all parties that have a vested interest in the classroom to take great care and purpose with the money we have been given

#### **Student learning:**

NOCTI: (National Occupational Competency Testing Institute) delivers a battery of assessments or Standardized tests for students studying career and technical programs in high schools and technical colleges in the United States.

\*These are the classes we would offer this opportunity, Early Child Development, Consumer Housing, and Culinary II. There is a cost to these competency testing and we would like to be able to purchase the test for our students.

\*Field trip to our land grant college Montana State University, Bozeman MT. We would like to take a charter bus to Bozeman and visit for following colleges on campus/Bozeman. Gallatin Valley Collage for the Interior Design a 2 year program, College of Health, and Human Development, and Jake Jabs College of Business and Entrepreneurship.

\*Field trips to area resources, this would also include bus travel, substitute teacher and supplies for projects: Western Sugar, Great Grains of Montana production plant and restaurant, Fiberworks (Laura Heine is a world renowned fabric designer and quilt artist) Hospital tours to the labor and delivery department.

\* We would also like to use some of the funds to purchase reading books to develop an opportunity for extended learning through reading groups. Miss. Skovgaard has used personal financial reading books to enrich her Single Survival and Family Life. She has enriched the classes by creating a "book club" with students working together to create a presentation and discussion groups.

\*Update the ServSafe curriculum student's books and educational video's

#### **Classroom needs:**

\*Pressure cookers (6), Cuisinart food processor (6), silk screen printer and supplies, small kitchen tools that need to be replaced, pay for the cabinets and counter tops for the



laundry room, replace commercial refrigerator (must be purchased in Billings at local vender and not online), upgrade computerize embroidery machine (used in Made in Montana and in textiles I, II) replace sewing cabinets, work tables for our lab room 103.

\*Updated textbooks for culinary (upper level) and Tourism and Hospitality Textbook or resource books

\*Updating of computers for Real Care Babies

\*During the 2017 Montana Legislative session I would like to take our FCS and FCCLA students to the Montana ACTE Rotunda activity in February. We would like set up an information booth about our program at Skyview. We have done this activity a couple times before and the students and Billings legislators love this event.

#### **Teacher training:**

\*Summer training at the Missoula College of Business Technology for Culinary Arts, (week long, hotel, transportation expenses)

\*Teacher training for ServSafe food handlers class to get certified to teach it in the classroom (for all 3 three teachers)

\*FCS update in Bozeman MT, last week in July

\*Attending an Interior design educators class

\* Attending Region V ACTE in San Diego in April, 2016

\*AAFCS conference in Havre MT in April, 2016

#### **Career and Technical Student Organization: Family, Career, Community Leaders of America**

STAR Event project supplies for display and portfolios

Red FCCLA jackets up to eight jackets

To help with travel- to state leadership training in Bozeman (fall semester), FCCLA Cluster Leadership SKILLS competition in Denver (fall semester), FCCLA National Leadership and STAR event week in July.



## Skyview Business

It shows some of the equipment that we purchased with our State Vocational Funds. We have 70 students in our BPA chapter, and many of them are involved in judged events. (Financial Analyst Team, Small Business Management Team, Economic Research Team, Graphic Design, and more). The increase in funding allowed us to purchase equipment to help them with competitions. (Laptops, projectors, printers)

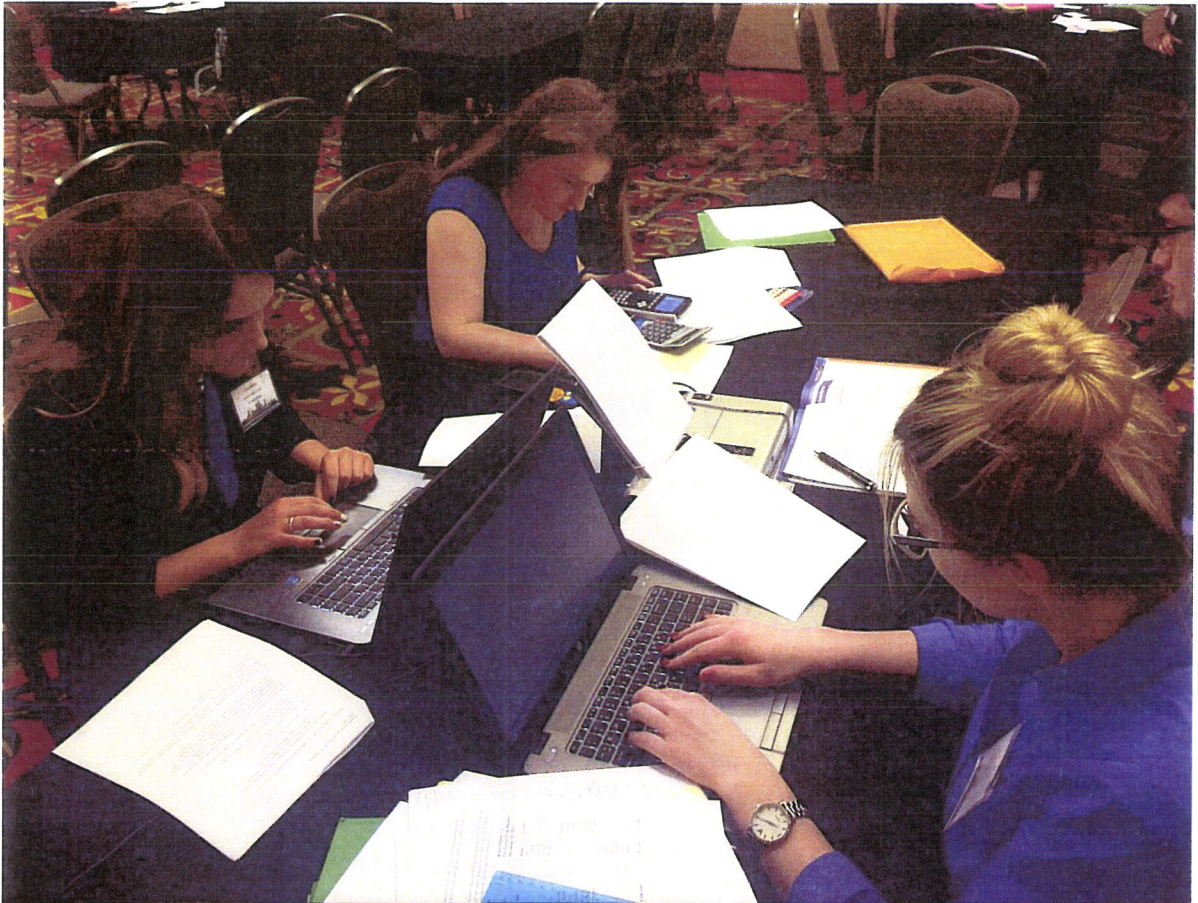
The pictures are from the Financial Analyst Team competition. Skyview had 2 teams competing. Both teams placed in the top 5 in the state, and one team placed 1st---this qualified them for nationals! Financial Analyst Team is one of the most competitive events overall. The teams were given a financial scenario that was used to complete and analyze financial statements (using ratios), prepare a report and formal presentation--all in 90 minutes. Their solution and recommendations were then presented to judges.

It would not have been possible for this many students to compete in these types of events without the additional equipment.

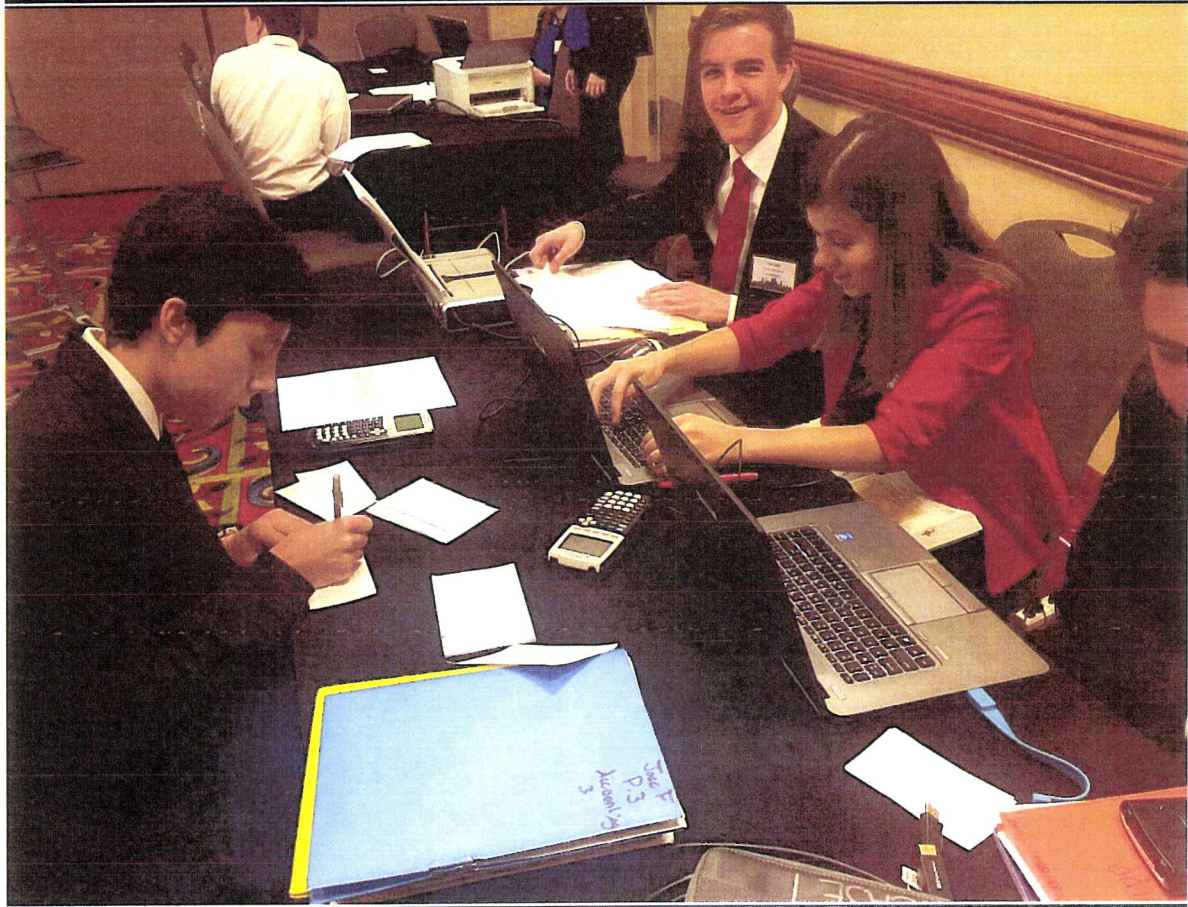
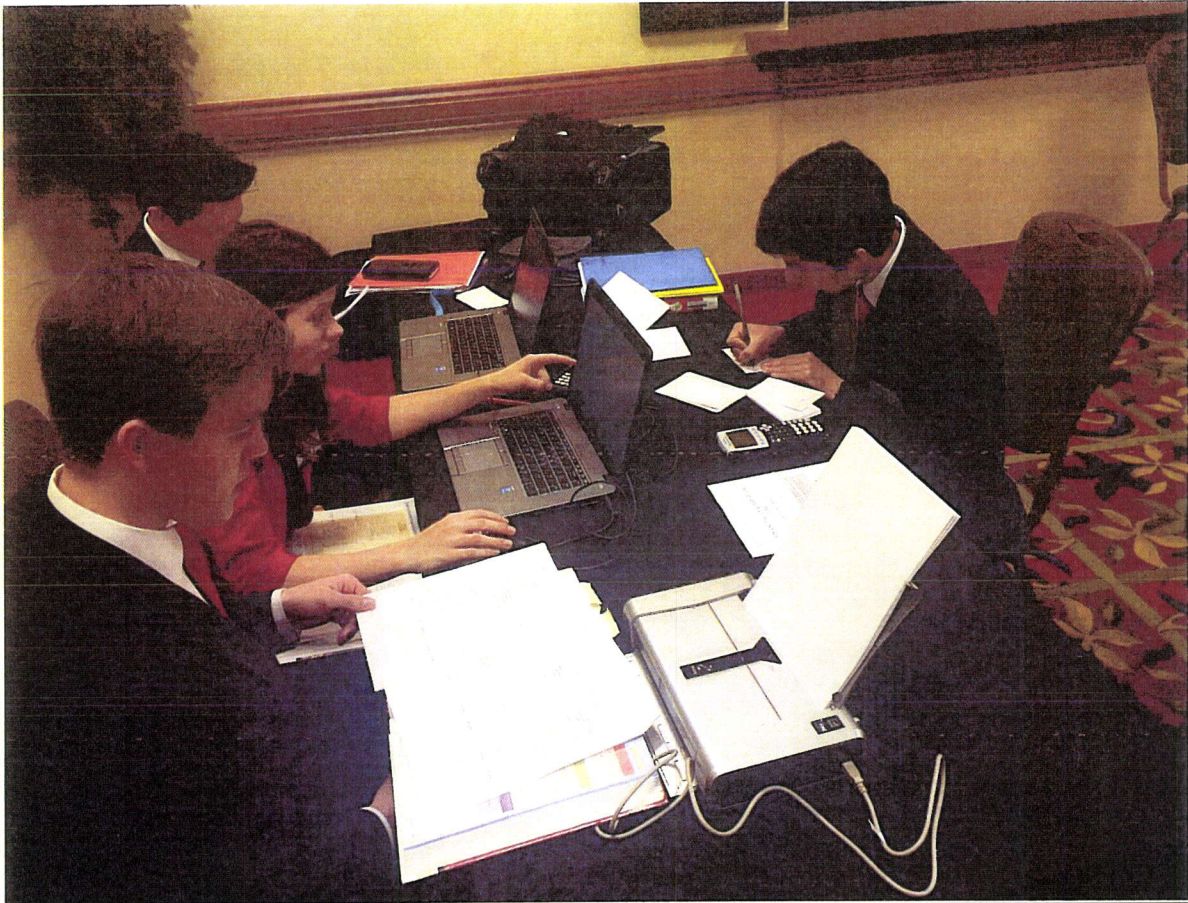
Thank you for everything you have done to support CTE in our school district. We will miss you!

Molly & Janelle

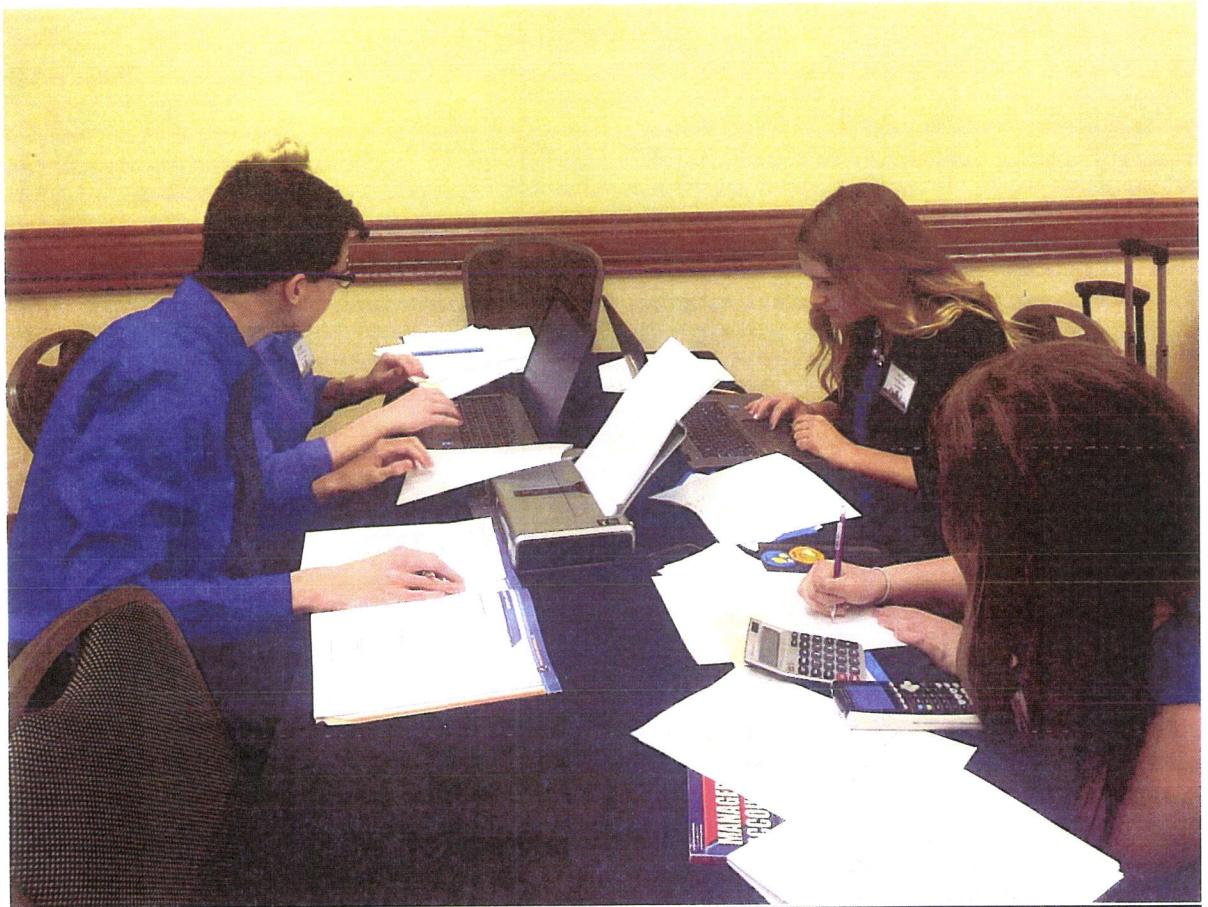














### **Senior High School CTE**

Due to the growth of our populations at Senior High School; our CTE classes have grown, so it has been necessary to complete a third lab with computers and printers as we have grown our CTE classes to capacity of 30. It was a major expense but a major asset to our business department. We have had to purchase more supplemental materials for our students as well. The students are being prepared for college and the work force with rigor and relevance being demonstrated in the classroom on a daily basis. With the purchase of new equipment and supplemental materials we have helped our BPA students be better prepared to complete academically in Boston, Mass and further competitions in the future. They compete with students from all over the USA. Our classroom setting is more like an office simulation which has also enhanced students learning for the workforce readiness. As you can see from the enclosed pictures we have gone from old to new computers, printers from 1997 were replaced with new laser printers (black) as well as color. Trips for staff development have been funded. The BPA coach has had sub pay covered to travel to National convention as well.

### **Senior High School FCS**

The FCS department at Billings Senior High currently has two full time teachers. In the fiscal year 2015/16, we served approximately 500 students. Our current classes continue to range from 24 to 30 students. This year we were able to use our CTE funds to replace a portion of our induction ranges in the two culinary rooms. We were also able to purchase 5 standing mixers and 6 heavy duty blenders. This year's funding allowed us to serve a large student population while also providing the students with a strong experience and understanding of various aspects of the industry. Our programs continue to remain relevant and this relevance is evident by the number of students that sign up for our programs. Program expansion and improvement would be an area that Senior High's FCS department would benefit from increased funding. This would require remodeling a portion of existing facilities into a commercial kitchen. Expanding our curriculum and the F.T.E. of our current program would allow us to meet the needs of all the students that express a desire to enroll in our program. The attached photo is the equipment that we were able to purchase to serve our current populations in an appropriate manner.

Sincerely,

Heide Mankin

Mary McRae





### **Senior High School Business Department**

In the past we have spent our state funding on conferences, software, computers, books, printers etc. that is necessary to sustain our classrooms for the growth of our department. As it states in the enclosed papers, we are to use these funds for enhancing our classes and use for expansion with the number of students.

This year we are planning to purchase some big ticket items as we are desperately in need of these items. Some years we let the funds build because of this exact thing.

- (1) 200 Accounting 1 workbooks @ \$28.00 per book \$5600



- (2) 31 large hand held calculators for acct. @ \$20.00 each
- (3) 5 computers (same as what we already have) all in one HP \$6000.00
- (4) 3 HP Pavilion laptops (see enclosed sheet)
- (5) 2 HP laserjet printers
- (6) 2 HP Color laserjet printers
- (7) Partial payment toward the Adobe Creative Suite 6 Production \$2000

Our printers are workhorses and have been used since 1997 and a couple replacements in 2006 which are 9 years old and have pretty much died. We use them daily for student's projects. (Portfolios, brochures, flyers, models for the class)